

## **Suggested Criteria for Developing Water Quality Targets**

The following criteria were developed by the Ecosystem, Agriculture, and Urban Subteams of the CALFED Water Quality Program to determine water quality targets, tissue targets and sediment targets for parameters of concern. The information below was obtained from meeting minutes, handouts and reports developed by the three groups.

### **Water Quality Targets**

#### **Environmental Beneficial Uses**

- Central Valley or San Francisco Bay Water Quality Control Plan objectives (including narrative objectives)
- USEPA 304(a) guidelines/National Toxics Rule criteria, where available
  - If 304(a) guidelines or National Toxics Rule criteria are invalidated, refer to USEPA National Ambient Water Quality criteria for freshwater aquatic life protection
- California Department of Fish and Game recommended pesticide hazard assessment criteria
- California Department of Health Services Maximum Contaminant Levels
- California Department of Health Services Public Health Advisories
- National Academy of Science guidelines
- Inland Surface Water and Enclosed Bay and Estuaries plans (if adopted for California)
- Other criteria developed by regulatory bodies in response to local water quality problems (i.e., USEPA Great Lakes standards, selenium standards in San Francisco Bay).

#### **Agricultural Beneficial Uses**

- Ayers, R.S., and D.W. Westcot. 1989. Water quality for agriculture -- FAO Irrigation and Drainage Paper 29, Rev 1. Food and Agriculture Organization of the United Nations. Rome.

Review the application of coefficients for modeling salinity effects on crop yield in:

- Maas, E.V. 1984. Salt tolerance of plants. In: The Handbook of Plant Science in Agriculture. B.R. Christie (ed.). CRC Press, Boca Raton, FL.

- Maas, E.V. and G.J. Hoffman. 1976. Crop salt tolerance: Evaluation of existing data. In: Proc. International Salinity Conf., Lubbock, TX. Aug. 1976. Pp. 187-198.
- Maas, E.V. and G.J. Hoffman. 1977. Crop salt tolerance -- current assessment. J. Irrigation and Drainage Division, ASCE 103 (IRZ):115-134. Proceeding Paper 12993.
- Maas, E.V. and G.J. Hoffman. 1983. Sensitivity of corn at various growth stages. California Agriculture, 37(7), July-August 1983.

#### Drinking Water Beneficial Uses

- Cheng, R.C. et. Al., 1995. "Enhanced Coagulation: A Preliminary Evaluation," *Journal AWWA*, 87:2:91 (February, 1995).
- Malcolm Pirnie, Inc., 1993. *Bay-Delta Water Quality Modeling*, prepared for the Metropolitan Water District of Southern California, December 1993.
- Ozekin, K., 1994. *Modeling Bromate Formation During Ozonation and Assisting Its Control*. PhD Thesis, University of Colorado, 1994.
- Shukaity, H.M. et. al., 1994. "Bromide Impact on Disinfection By-Product Formation and Control: Part 1 Ozonation," *Journal AWWA*, 86:6:72 (June, 1994).
- Summers, R.S. et. al., 1996. "Assessing DBP Yield: Uniform Formation Conditions," *Journal AWWA*, 88:6:80 (June 1996)
- USEPA, 1994. National Primary Drinking Water Regulations; Disinfectants and Disinfection Byproducts; Proposed Rule. *Fed. Reg.* 59:145:38668 (July 29, 1994).

#### **Tissue Targets**

#### Environmental Beneficial Uses

- National Academy of Sciences (NAS) - National Academy of Engineering (1973) values
- For selenium - San Luis Drain Reuse, Technical Advisory Committee, Selenium ecological risk guidelines

## **Sediment Targets**

### **Environmental Beneficial Uses**

- Effect range-low (ERL) concentrations for estuarine and freshwater sediment
- National Oceanic and Atmospheric Administration sediment guidelines and USEPA sediment quality criteria